Enhanced Plan – Comprehensive State Hazard Mitigation Program

Introduction

Washington has a long history of hazard mitigation and damage-reduction initiatives. For example, the state has been a national leader in floodplain management, enacting in 1935 one of the first state floodplain management laws in the country, and enacting in 1955 a law requiring hospitals, schools and other publicly owned structures to be constructed to resist probable earthquake intensities. Adopted in 1990, the Growth Management Act requires all counties, towns and cities to identify and develop regulations to identify and restrict development in critical areas, including frequently flooded and geologically hazardous areas.

The purpose of this section of the Washington State Hazard Mitigation Plan is to provide evidence that the state has a comprehensive hazard mitigation program.

Integration with Other Planning Initiatives

Plan Criteria: *Demonstrate that the plan is integrated to the extent practicable with other state and/or regional planning initiatives (comprehensive, growth management, economic development, capital improvement, and/or emergency management plans) and FEMA initiatives that provide guidance to state and regional agencies.*

Hazard mitigation planning is integrated into several key state planning initiatives and mitigation programs. The primary examples are the Growth Management Act, Shoreline Management Act, the Flood Control Assistance Account Program, and the FEMA-funded, state-administered hazard mitigation programs.

Growth Management Act – This state law (RCW 36.70A) requires all cities, towns and counties in the state to identify critical areas, and to establish regulations to protect and limit development in those areas. Among the critical areas defined by state law are frequently flooded areas (floodplains, and areas potentially impacted by tsunamis and high tides driven by strong winds) and geologically hazardous areas (those areas susceptible to erosion, landslide, seismic activity, or other geological events such as coalmine hazards, volcanic hazard, mass wasting, debris flows, rock falls, and differential settlement).

Guidance provided to local government states goals for critical areas protection programs should address:

- Protecting members of the public and public resources and facilities from injury, loss of life, or property damage due to landslides and steep slope failures, erosion, seismic events, volcanic eruptions, or flooding.

- Maintaining healthy, functioning ecosystems through the protection of unique, fragile, and valuable elements of the environment.

- Directing activities not dependent on critical areas resources to less ecologically sensitive sites and mitigating unavoidable impacts to critical areas by regulating alterations in and adjacent to critical areas.

- Preventing cumulative adverse environmental impacts to frequently flooded areas, among others.

Local governments must consider best available science in their identification and protection of critical areas. Every seven years, cities and counties must review and revise as necessary their critical areas policies.

The act also allows those cities and counties required or choosing to develop comprehensive plans to add an optional natural hazard reduction element to those plans. To facilitate the development of natural hazard reduction elements, the Department of Community Trade and Economic Development – Growth Management Services used a Hazard Mitigation Grant Program grant to develop and publish a guidebook on how to incorporate natural hazard reduction into local land-use plans.

Additionally, staff from the State Emergency Management Division's Mitigation Section continually works with the Department of Community Trade and Economic Development – Growth Management Services to ensure the connection between hazard mitigation and land-use planning and development regulations. For example, Mitigation Section staff continually identifies for land-use planners sources of best available science for frequently flooded areas and geologically hazardous areas, and participate on an ongoing basis in an interagency coordinating committee on growth management planning.

Shoreline Management Act – This program, administered by the Department of Ecology, requires local jurisdictions with shorelines (see *Shoreline Management*, Local Capability Assessment, Mitigation Strategy, Tab 8, page 20) to develop regulations that accommodates reasonable and appropriate uses, protects shoreline resources, and protects the public's right to access and use shorelines. Local jurisdictions can use shoreline regulations to avoid development on unstable shoreline slopes and in frequently flooded areas. The Department of Ecology recently updated implementing regulations; they are more comprehensive than before and require local shoreline regulations to better incorporate science and protect critical resources and physical processes and functions. The department is providing $2 million this biennium (2003-05) and $4 million per biennium through 2014 to help fund local shoreline planning and regulation development efforts.

Flood Control Assistance Account Program – This program, administered by the Department of Ecology, provides financial assistance to eligible local agencies that belong to the National Flood Insurance Program for preparing comprehensive flood control management plans and flood control maintenance projects that protect human life and property from flood related events. This program provides $1 million per year in grants during the current 2003-05 biennial state budget. The program's limited

resources will be focused on local planning during this biennium – including completion of floodplain management plans begun in previous years and *development of the flood planning element of local hazard mitigation plans being prepared under 44 CFR Part 201.6* (emphasis added).

Federal hazard mitigation programs – State hazard mitigation planning is integrated into the Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, and the Pre-Disaster Mitigation Assistance Program. For example, since early 2002, the state required recipients of Hazard Mitigation Grant Program construction grants to develop a hazard mitigation plan as a condition of receipt of the grant; this requirement added nine hazard mitigation plans for communities that otherwise might not have developed a plan. And, the state's administrative plan for all three programs requires all construction-related mitigation projects to support the general mitigation objectives in the state's hazard mitigation strategy. (Note: As of this writing, the state mitigation strategy adopted and published in 2000 is the strategy of record. This document, the State Hazard Mitigation Plan, developed under the requirements of 44 CFR Parts 201.4 and 201.5, will become the strategy of record after adoption by the state and upon approval by FEMA.)

For additional details on integration of hazard mitigation into other initiatives, see pages 39 through 47 of this chapter.

Clearly, the concept of hazard damage reduction and / or state hazard mitigation planning can be – and should be – integrated into other important state planning initiatives such as economic development, capital improvement, comprehensive emergency management, and disaster recovery and restoration planning. Before the next edition of the State Hazard Mitigation Plan (c. 2007), a subcommittee of the State Hazard Mitigation Advisory Team will explore the feasibility of integrating hazard mitigation with other statewide planning initiatives, develop a planning integration strategy, and begin implementing it.

Project Implementation Capabilities

Plan Criteria: *Document the state's project implementation capability, identifying and demonstrating the ability to implement the plan, including:*

- *Establishing eligibility criteria for multi-hazard mitigation measures; and*
- *A system to determine the cost effectiveness of mitigation measures consistent with OMB Circular A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, and to rank the measures according to the state's eligibility criteria.*

The State Emergency Management Division's Mitigation Section developed state criteria for determining eligibility of proposed multi-hazard mitigation measures. The Hazard Mitigation Grant Program Administrative Plan (latest edition, October 2003), Tab 10, lists the following criteria used for all federal hazard mitigation programs:

State Eligibility Criteria – In addition to published federal eligibility criteria, a project must also support the general hazard mitigation objectives contained in the State Hazard Mitigation Plan. Specifically, these projects should:

1. Show adoption of a local hazard mitigation plan.
2. Protect lives and reduce public risk.
3. Reduce the level of disaster vulnerability in existing structures.
4. Reduce the number of vulnerable structures through acquisition, relocation, flood proofing, or seismic retrofitting.
5. Avoid inappropriate future development in areas known to be vulnerable to future disasters.
6. Solve a problem independently, or function as a beneficial part of an overall solution with assurance that the whole project will be completed.
7. Provide a cooperative, inter-jurisdictional solution to reduce future disaster damage.
8. Provide a long-term mitigation solution.
9. Address emergency hazard damage issues such as urban storm water, trees in power right of ways, new earthquake faults, etc.
10. Restore or protect natural resources, recreation, open spaces, and other environmental values.
11. Develop and implement comprehensive programs, standards, and regulations that reduce disaster damage.
12. Increase public awareness of natural hazards, preventative measures, and emergency responses to disasters.
13. Upon completion, have affordable operation and maintenance costs.
14. Illustrate how the project improves the Applicant's ability to protect its critical areas according to the Growth Management Act (GMA), and generally supports the goals of the GMA.

    Note: Those communities without a current approved Critical Area Ordinances or a GMA Comprehensive Plan (if required) will not be eligible to apply for mitigation grant program funds until they are in compliance.

Before proposed project applications are submitted to the Mitigation Grant Review Committee for scoring and ranking (see narrative entitled *Evaluation, Approval of Proposed Mitigation Projects*, page 5), staff from the State Emergency Management Division's Mitigation Section works closely with applicants to ensure that their proposals are cost-effective. Only projects with a benefit-cost ratio of at least 1-to-1 are forwarded to a review committee for further consideration and evaluation against federal and state criteria.

Mitigation Section staff received specialized benefit-cost analysis training from the Federal Emergency Management Agency to better understand the concept of benefit-cost and to help applicants with their in the benefit-cost analysis. Most recently, two staff received benefit-cost analysis training at the Emergency Management Institute in December 2002 and four staff received benefit-cost analysis training at in-state FEMA seminars in August 2003.

To help potential applicants develop mitigation projects that are as cost-effective as possible, and that have a public benefit of one dollar for each dollar of cost, the Mitigation Section provides:

- Workshops to help potential grant applicants understand the benefit-cost concept, and to help them assemble the necessary data for the benefit-cost analysis. About 35 staff from potential applicant agencies attended three benefit-cost training sessions in Richland, Everett and Tacoma conducted in August 2003 by FEMA and sponsored by the Mitigation Section. About 30 staff from about 15 jurisdictions attended two-day benefit-cost workshops in March 2004.

- Worksheets in the grant application guide the development of the benefit-cost narrative and the data necessary for an accurate and complete benefit-cost analysis.

- Individual training and technical support to potential grant applicants, upon request. Such support includes walking applicants through appropriate benefit-cost modules and providing feedback to ensure development of the best possible benefit-cost ratio.

Benefit-cost analyses for proposed mitigation projects use FEMA-approved benefit-cost modules, which are based on the benefit-cost criteria established in OMB Circular A-94, Guidelines and Discount Rates For Benefit-Cost Analysis of Federal Programs. (For more on benefit-cost analyses, see Program Management Capability section, below.)

Evaluation, Approval of Proposed Mitigation Projects

A Mitigation Grant Review Committee of state and local representatives evaluates and prioritizes eligible mitigation grant applications. The committee uses a scoring system to prioritize projects according to both federal eligibility criteria (listed in both the Hazard Mitigation Grant Program Administrative Plan, Tab 10, and in program application documents, also in state administrative plan) and the state eligibility criteria listed above (also published in application documents).

For each round of grant funding, a review committee of at least five members, as described below, is convened:

- Two individuals from the Military Department – usually the Deputy State Coordinating Officer and the State Hazard Mitigation Program Manager.

- One supervisor or designee of the particular state agencies related to the particular type/nature of the disaster (example: Department of Ecology representative for floods, Department of Natural Resources for geologic hazards).

- Two individuals, one from a city, and one from a county or appropriate special service district, located outside of the declared disaster area or from a community not applying for mitigation funds.

The committee uses a scoring system that emphasizes seriousness of risk when considering an applicant's responses to the following federal and state eligibility criteria. Among the criteria receiving greatest weight in scoring are those dealing with reduction of risk posed by hazards, prevention of repetitive losses, and protection of critical areas including frequently flooded areas and geologically hazardous areas.

Criteria for construction (both structural and non-structural) projects (from Hazard Mitigation Grant Programs Project Evaluation Score Sheet, October 2003):

- Selection of the best alternative.
    - Applicant must demonstrate, through a written narrative that describes each alternative considered, that the alternative chosen is the one most practical, effective, and environmentally sound among the possible solutions. Applicants must show at least three alternatives.

- Federal and state criteria. Does the application/project show that:
    - The jurisdiction has an approved natural hazard reduction plan?
        - If yes, is this project identified within it?
    - It protects lives and reduces public risk?
    - It reduces the level of hazard damage vulnerability in existing structures and developed property?
    - It reduces the number of vulnerable structures through acquisition, relocation or retrofit? Does the jurisdiction describe plans for the acquired property (open space, etc.)?
    - The project addresses structures in the Repetitive Flood Loss areas by acquisition, elevation, or relocation?
    - It avoids inappropriate future development in areas that are vulnerable to the hazard damage?
    - It solves a problem independently, or functions as a beneficial part of an overall solution?
    - It provides a cooperative, inter-jurisdictional/inter-agency solution to the problem?
    - It provides a long-term mitigation solution (not a short-term fix) in locations that experience repetitive hazard damage?
    - It addresses emerging hazard damage issues (e.g., Damage caused by storm water runoff at build-out densities, trees in right-of-ways, identification of new EQ faults, etc.)?
    - Restore or protect natural resource, recreational, open space, and/or built environment values?
    - Shows development and implementation of comprehensive programs, standards, and regulations that reduce future hazard damage?

- Increases public awareness of hazards, preventive measures, and emergency responses to disasters?
- Upon completion, have affordable operation and maintenance costs that the applicant jurisdiction is committed to support?
- Has the jurisdiction documented how the project improves its ability to protect its critical areas, as required by the Growth Management Act?

Criteria for planning projects (from Mitigation Grant Programs Planning Application Evaluation Score Sheet, October 2003):

Planning process:

- How well do they describe how they will provide the public an opportunity to participate in the planning process?
- How well do they describe how they will include neighboring communities, local and regional agencies, business, academia, and other interests in the planning process?
- How well do they describe previous planning efforts and how they will incorporate them into this all hazards planning process?

Risk assessment element:

- If the applicant has a current Risk Assessment, does it contain a description of the type, location, and extent of all natural hazards that can affect the jurisdiction?
- If the community does not have a Risk Assessment, how well do they describe how they will complete it?
- How well did they document previous occurrences of hazard events and the probability of future hazard events?
- Has the applicant completed a vulnerability assessment for the hazards identified in their risk assessment that includes:
- The types and numbers of existing and future buildings, infrastructure and critical facilities located in the identified hazard areas;
- An estimate of the potential dollar losses to vulnerable structures identified and a description of the methodology used to develop this estimate;
- A general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- If the applicant has not completed a vulnerability assessment, how well did they describe how they would complete the above elements of a vulnerability assessment?

Mitigation strategy element:

- If the applicant currently has a mitigation strategy, does it contain a description of local mitigation goals and objectives with proposed strategies, programs, and actions to reduce or avoid long-term vulnerabilities to the identified hazards?
- If not, how well does the applicant describe how they will develop these goals, objectives, strategies, and programs?

- Has the applicant conducted an analysis of a comprehensive range of specific mitigation actions and projects under consideration to reduce the effects of each identified hazard, with particular emphasis on new and existing buildings and infrastructure?
- If not, how well did they describe how they will complete the analysis and what areas it will cover?
- How well did the applicant describe how they will develop an action plan describing the actions in the analysis element and how they will prioritize and implement the plan?
- Did the applicant develop a set of specific cost effective mitigation projects that will reduce damages from future disaster that included a summary of how they identified and prioritized these actions?
- If not, did the applicant describe what types of projects they might consider and how they would prioritize them?
- Did the applicant describe how these actions would support the mitigation goals and priorities of the community?
- Did the applicant provide a description of their process to reduce the number of NFIP target repetitive loss properties in the community that included a summary of the process?
- If not, did the applicant describe how it would address the repetitive flood loss issue in their community?
- How well did the applicant describe how their community is committed to reducing damages from future natural disasters through the development of partnerships with businesses, academia and other private and non-profit interests able to provide financial or technical assistance in support of the community's mitigation goals and priorities to include specific examples of any current activities?
- How well did the applicant describe the development trends within their community and discuss actions to mitigate disaster losses in these areas?
- Did the applicant discuss if their plan will require any interagency agreements to implement?

Plan maintenance element: How well does the applicant address the following?

- A section describing the established method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
- A process by which the applicant will incorporate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans.
- A discussion on how the community will maintain public participation in the planning process.
- Plans for formal adoption of the plan by the community.
- A section describing implementation and administration of the plan by the local government, including a discussion of how officials will approach and manage mitigation actions involving the acquisition of private property.

Additionally, to be eligible for hazard mitigation grant funding, potential grant applicants have to demonstrate they are in good standing with the National Flood Insurance Program, and have either a current approved Critical Areas Ordinance and / or a current approved comprehensive land-use plan as required by the State Growth Management Act.

Once the Mitigation Grant Review Committee evaluates and ranks proposed applications in priority order, the State Emergency Management Division's Mitigation Section forwards the ranked applications to the Region 10 office of the Federal Emergency Management Agency for additional review, approval, and funding.

Program Management Capability

Plan Criteria: *Document that the state has the capability to effectively manage the HMGP as well as other mitigation grant programs [and provide] a record of the following:*

Meeting HMGP and other mitigation grant application timeframes and submitting complete, technically feasible, and eligible project applications with appropriate supporting documentation.

The following narrative describes the way the Mitigation Section of the State Emergency Management Division handles the application process once notice of hazard mitigation grant funding becomes available. Details are in the Hazard Mitigation Grant Program Administrative Plan, Tab 10, but summarized below. Initially, letters of intent are solicited from potential applicants; eligible organizations submitting letters of intent are provided with full applications.

- As soon as possible following notice from FEMA, the state distributes to potential eligible applicants statewide a notice of funding, letters of intent, funding criteria, application deadlines, and other pertinent information. For example, the state distributed this information 12 days after the November 7, 2003 declaration for the October 2003 Flood Disaster (DR-1499). Additionally, information typically is provided through Public Assistance program applicant briefings, separate hazard mitigation grant applicant briefings, and a press release.

- Once received, letters of intent are reviewed, and eligible organizations are provided with a full application. Depending upon the disaster, organizations will have 60 to 90 days to complete their applications.

- Applicants are required to provide extensive information on proposed projects, including:
    - Data on the project and project site.
    - Designation of the applicant agent.
    - Project budget and identification of funding sources.

  - Description of how the project meets federal and state mitigation goals, and of public involvement.
  - Discussion of three alternatives and their impacts.
  - Information on potential environmental impacts and data for the benefit-cost analysis (see section below for more details on preparing and submitting accurate environmental review and benefit-cost analyses).

- Once received, at least two staff reviews each application using a checklist to ensure it provides all information necessary for the state to make a judgment on the eligibility, technical feasibility, and cost-effectiveness of the proposed project. Additionally, staffs from appropriate state agencies review the environmental information presented in each application.

- State staff provides technical assistance to help applicants prepare complete applications, and provides guidance and training to help applicants develop their benefit-cost analyses. Upon request, state staff help applicants prepare their benefit-cost analyses.

Plan Criteria: *Preparing and submitting accurate environmental reviews and benefit-cost analyses.*

Note: In the sections below, RCW refers to the Revised Code of Washington (state law) and WAC refers to the Washington Administrative Code (regulations that implement state law).

Environmental Reviews

The State of Washington relies on the staff of Federal Emergency Management Agency Region 10 to conduct environmental reviews for construction projects seeking hazard mitigation grant funding from the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, or the Flood Mitigation Assistance Program. Before recommending FEMA approval of a project for a hazard mitigation grant, the state requires applicants to ensure their proposed projects and alternatives comply with all applicable federal, state and local codes and standards, including the National Environmental Policy Act (PL 91-190, as amended) and all federal laws covered within the act, and for securing the necessary permits and approvals. The state reviews each application's environmental documentation and prepares an initial environmental review worksheet that it forwards to FEMA for each recommended project.

To help applicants assemble the required environmental information, the state distributes copies of the Green Book of environmental considerations and contacts prepared after each disaster declaration. For example, the Green Book prepared for the state's most recent disaster, the October 2003 Severe Storms and Flood, DR-1499, includes information on and federal and state contacts for endangered species (including a list of endangered and threatened species in each of the declared

counties), water resources, floodplains, wetlands, historic preservation, and debris and waste management in the disaster areas.

Below is a synopsis of the information, documentation, and assurances that applicants must provide to the state and to FEMA to ensure compliance with applicable historic preservation and environmental protection laws and regulations:

Historic and Archaeological Resources (PL 96-515, Section 106) – Applicants must determine whether there is a potential for archaeologically significant resources on or near the site of the project and they are asked about consultation with the State Historic Preservation Officer regarding the project.

Floodplains and Wetlands Disclosure (RCW 86.16, Presidential Executive Orders EO-11988 and EO-11990, and Governor's Executive Order 90-04) – Applicants must determine whether there is a wetland on or near the site, and if so, to address how they will comply with the requirements of Governor's Executive Order 90-04 on protecting wetlands. This may include the preparation and Department of Ecology approval of a wetlands compensatory mitigation plan. For floodplains, applicants must show compliance with the applicable Presidential Executive Orders. This includes determining whether the project has the potential to affect or to be affected by a floodplain or wetland, evaluating alternatives outside the floodplain or wetland, determining the direct or indirect impacts associated with occupancy or modification of the floodplain or wetland, and determining how to minimize potential impacts.

Environmental Justice (Presidential Executive Order 12898) – Applicants must determine whether concentrations of minority or low income populations live in or near the project area, whether those populations would be disproportionately impacted by the project, and how the project's benefits would outweigh identified impacts.

Toxic and Hazardous Substances – Applicants must provide a waiver of liability if there are any toxic and hazardous substances, including underground or above ground storage tanks, septic systems, or other potential contaminants, in the project area.

Endangered Species and Habitats – Applicants must determine whether there are any threatened, endangered or sensitive species or habitats on or near the project site.

Hydraulic Code Compliance (RCW 77.55.100-180) – Applicants must determine whether their project would be below the ordinary high water line in the bed of any fresh or salt water of the state.

State Environmental Policy Act Compliance (WAC 197-11) – Applicants must include either a completed Environmental Checklist or a Determination of Non-Significance, state whether a Determination of Non-Significance or Claim for Categorical Exemption will be sought for the project, and provide details and the sections of SPEA regulations under which an exemption will be claimed, if that action will be taken.

Shoreline Management Act Compliance (RCW 90.58) – Applicants must determine whether the project is on a shoreline that falls within the jurisdiction of the act.

Critical Areas Disclosure (RCW 30.70A and RCW 43.17.250) – Applicants must determine whether the project is within one of the critical areas defined by state law (including wetlands, aquifer recharge areas, frequently flooded areas, fish and wildlife habitat areas, and geologically hazardous areas), and must explain how their development regulations will protect those areas.

Code Compliance Assurance – Applicants must state whether their project meets all applicable codes and standards for the area in which it is located, and if not, to describe the exemptions and variances that will be required.

On the following pages are two examples of initial environmental review worksheets (referred to earlier in this section) that were completed for projects funded by Hazard Mitigation Grant Program funds following the 2001 Nisqually earthquake disaster, DR-1361. These checklists are for a seismic retrofit of the gymnasium building at Onalaska High School and for a seismic retrofit for water tanks of the Skyway Water and Sewer District.

WA HMGP Initial Environmental Review Evaluation Sheet
FEMA-1361-DR-WA

Applicant: Onalaska School District
Project Title: Retrofit Onalaska High School/Red Cross Shelter
Reviewer: Heather White
Date reviewed: 1/29/02

☒ Project demonstrates positive b/c ratio, is feasible, and had public involvement
☒ Photos, site maps, the FIRM, and a thorough project description are attached
☒ Project area is rural, rural-residential or agricultural
☐ Project area is urban with substantial infrastructure in place
☐ There is a waterway in project area that may/may not have listed species (See p.____)
Name, if known: _____

Lat: **Long:**
Catex level: 2
Catex category: xv
E.A. Needed? YES☐ NO☒ UNSURE☐

SPECIAL CONSIDERATIONS	**YES**	**NO**	**UNSURE**
1. Any structures 49+ years old?	☐	☒	☐
1.a. If **YES**, Historic Pres. photos are included in packet	☐	☐	
2. Disturbance to previously undisturbed ground?	☐	☒	☐
3. Potential disturbance to cultural/archaeological resources?	☐	☒	☐
4. Disturbance to natural environment?	☐	☒	☐
5. Toxic/hazardous substances in project area?	☐	☒	☐
6. Located in or near a floodplain?	☐	☒	☐
6.a. If **YES**, EO 11988 compliance is documented (See p.)	☐	☐	☐
6.b. If **YES**, Initial public notice is documented (See p.)	☐	☐	
7. Located in or near wetland?	☐	☒	☐
7.a. If **YES**, EO 11990 compliance is documented (See p.)	☐	☐	☐
7.b. If **YES**, initial public notice is documented (See p.)	☐	☐	
8. Disproportionately impact minority or low-income populations?	☐	☒	☐
9. Potential to negatively affect fish-bearing streams?	☐	☒	☐
10. Past use or area build-out can contribute to cumulative impacts?	☐	☒	☐

COORDINATION MAY BE NEEDED WITH FOLLOWING AGENCIES:
EPA, USFWS, WDFW

State Environmental Reviewer has initiated coordination? YES☐ NO☒

COMMENTS:
There is a fish hatchery located near the gym, across the street from gym is a lake used for rearing fish. Odor/noise problems may impact school if project cannot be completed during summer break. Possible construction debris and/or toxic materials from any equipment used.

This Initial Review on the subject HMGP Application was prepared and reviewed by:

WEMD, Heather White, Environmental Specialist

FEMA R10, Lois Lopez, HMGP Closeout Spec. Revised 1/18/02

WA HMGP Initial Environmental Review Evaluation Sheet
FEMA-1361-DR-WA

Applicant: Skyway Water & Sewer District
Project Title: Water Storage Tank Seismic Retrofit
Reviewer: Tammi Clark
Date reviewed: August 12, 2002

☒ Project demonstrates positive b/c ratio, is feasible, and had public involvement
☐ Photos, site maps, the FIRM, and a thorough project description are attached
☐ Project area is rural, rural-residential or agricultural
☒ Project area is urban with substantial infrastructure in place
☐ There is a waterway in project area that may/may not have listed species (See p.____)
Name, if known: _____

Lat: **Long:**
Catex level: 2
Catex category: xv
E.A. Needed? YES☐ NO☒ UNSURE☐

SPECIAL CONSIDERATIONS	**YES**	**NO**	**UNSURE**
1. Any structures 49+ years old?	☐	☒	☐
1.a. If **YES**, Historic Pres. photos are included in packet	☐	☐	
2. Disturbance to previously undisturbed ground?	☐	☒	☐
3. Potential disturbance to cultural/archaeological resources?	☐	☒	☐
4. Disturbance to natural environment?	☐	☒	☐
5. Toxic/hazardous substances in project area? (See Comments)	☒	☐	☐
6. Located in or near a floodplain?	☐	☒	☐
6.a. If **YES**, EO 11988 compliance is documented (See p.)	☐	☐	☐
6.b. If **YES**, Initial public notice is documented (See p.)	☐	☐	
7. Located in or near wetland?	☐	☒	☐
7.a. If **YES**, EO 11990 compliance is documented (See p.)	☐	☐	☐
7.b. If **YES**, initial public notice is documented (See p.)	☐	☐	
8. Disproportionately impact minority or low-income populations?	☐	☒	☐
9. Potential to negatively affect fish-bearing streams?	☐	☒	☐
10. Past use or area build-out can contribute to cumulative impacts?	☐	☒	☐

COORDINATION MAY BE NEEDED WITH FOLLOWING AGENCIES:
EPA

State Environmental Reviewer has initiated coordination? YES☐ NO☒

COMMENTS: Skyway did a seismic analysis on 4 tanks in 1999 (2 elevated and 2 standpipes). All four had significant structural deficiencies. Two of the tanks were built in the 1960's and two were built in the 1950's. One of the elevated tanks was determined to be NOT COST EFFECTIVE to retrofit. The old tank will be left standing without water and used as a cellular tower.
TANK #2: The South King County Emergency 911 building is located directly below the tank. This elevated tank was built in 1967 and is located in a residential area. The retrofit would consist of 1) pouring a concrete collar around four foundation piers (measure 1' by

This Initial Review on the subject HMGP Application was prepared and reviewed by:

developed concurrent with site visit

WEMD, Tammi Clark, HMGP Program Assistant — FEMA R10, Lois Lopez, HMGP Closeout Spec. Revised 1/18/02

16"), 2) Replace 8 upper and lower rod braces, 3) Install four concrete struts, and 4) install 2 thread anchor bolts into the four corner foundation piers. This project would basically stay within the existing footprint. After the retrofit, they will spray paint the entire tank. Possible dust emissions from paint spray. Possible construction debris and/or toxic materials from equipment used during retrofit.

TANK #3: Retrofit consists of 1) install a concrete ring beam foundation under and around the perimeter of the base containing twelve anchor bolts (1 ¼"), 2) install twelve chairs welded to the tank's sidewall shell plate, and 3) grit blasting and painting. Possible dust emissions from paint spray and grit blasting.

TANK #4: Tank #4 is about 4"-6" from the roof of a chlorination building. The retrofit consists of 1) install 12 drilled piers around the perimeter with 1 ¼" anchor bolts and 2) install 12 chairs welded to the tank's shell plate. Possible construction debris and/or toxic materials from equipment used during retrofit.

There will be approximately 55 combined cubic yards of soil excavated for Tanks #3 & #4. Dust emissions from Tanks #3 & #4 are possible during excavation. Types vegetation found on the site consist of deciduous trees, evergreen trees, shrubs, and grass. Tanks 3 & 4 currently have an access road around the perimeter. Short-term noise levels from construction equipment.

This Initial Review on the subject HMGP Application was prepared and reviewed by:

WEMD, Tammi Clark, HMGP Program Assistant

FEMA R10, Lois Lopez, HMGP Closeout Spec. Revised 1/18/02

Benefit-Cost Analysis

The State of Washington completes a benefit-cost analysis that meets FEMA criteria for every hazard mitigation project submitted for funding.

For each project's benefit-cost analysis, applicants must provide a narrative that describes the project and a number of other factors. The description must include the project's life-cycle cost, the value of the property it will protect, documented damage that has occurred in past disaster events because of no project, an estimate of the damage and associated costs that the project would prevent over its useful life. A cost-benefit worksheet must be completed that shows total project costs, project life in years, effectiveness of the project, repair costs to pre-disaster condition, annual maintenance costs, total of all past disaster related costs, displacement costs, and frequency of occurrence of the recent disaster event.

If the applicant is applying for seismic projects for roads, utilities, public buildings, residential buildings, and non-structural mitigation, they must provide a wide range of data on the structure and project, including occupancy of building, value of services provided, displacement costs, rent and business income, project description and costs. For flood projects, applicants must provide information on past flood events, frequency of each event type, and estimated damage expected for each event type before mitigation.

On the following pages are two examples of benefit-cost analyses completed for projects funded by the Hazard Mitigation Grant Program following the 2001 Nisqually earthquake disaster, DR-1361. They are for a seismic retrofit of the gymnasium building at Onalaska High School and for a seismic retrofit for water tanks of the Skyway Water and Sewer District. Note: The Onalaska project benefit-cost analysis attached is the second BCA performed on the project. It was run after costs increased for the project; the second BCA still shows the project to be cost-effective.

Earthquake Mitigation Project

Version 5.1 December 31, 1997

Revisw CB 4-12-02 LPM

SUMMARY			Scenario Run ID:	1
Onalaska High School	540 Carlisle Ave.		Onalaska, WA 98570	
Project Description: Seismic retrofit to gymansium, Red Cross Shelter, reinforce walls				
Default Building SDF Before Mitigation:	Typical		User-Entered SDF?	YES
Default Building SDF After Mitigation:	Default		User-Entered SDF?	YES
Building Type:	CONCRETE FRAME WITH URM INFILL		Analyst:	LPM

Data Used For This Analysis:

Building Replacement Value ($/sf)			$135.24
Total Floor Area (square feet):			26,833
Total Building Replacement Value:			$3,628,894
Demolition Threshold Damage Percentage:			50%
Total Contents Value			$102,000
Total Displacement Costs ($/month):			$9,500
One Time Displacement Costs ($)			$53,666
Cost of Providing Services from this Building ($/day)			$3,984
Post-Disaster Continuity Premium ($/day)			$0
Total Value of Lost Services ($/day)			$3,984
Total Monthly Rent from All Tenants ($/month)			$0
Estimated Net Income of Commercial Businesses ($/month)			$0
Total Mitigation Project Costs			$781,257
Discount Rate	7.00%	Present Value Coefficient	12.41
Project Useful Life (years)			30
Average Occupancy (24 hours, 7 days per week)			98.36
Value of Avoiding a Minor Injury			$1,560
Value of Avoiding a Serious Injury			$15,600
Statistical Value of Life			$2,710,000

Data That Vary By Seismic Intensity:

PGA (% of g)	Building SDF (%)	Modified SDF (%)	Contents SDF (%)	Displacement Time (days)	Functional Downtime (days)	Building Mit. Eff. (%)	Contents Mit. Eff. (%)	Annual Number of Earthquakes
4-8	0.03	0.03	0.03	0.00	0.03	44.84	44.84	3.85E-02
8-16	0.17	0.17	0.17	0.00	0.17	34.03	34.03	1.86E-02
16-32	0.48	0.48	0.48	0.00	0.48	22.87	22.87	8.30E-03
32-55	0.77	0.77	0.77	0.00	0.77	13.01	13.01	1.77E-03
55-80	0.91	0.91	0.91	0.00	0.91	6.72	6.72	1.12E-04
80-100	0.96	0.96	0.96	0.00	0.96	3.72	3.72	2.20E-05
>100	0.99	0.99	0.99	0.00	0.99	1.76	1.76	1.38E-05

	Before Mitigation			After Mitigation			
PGA (% of g)	Minor Injury Rate (per 1000)	Major Injury Rate (per 1000)	Death Rate (per 1000)	Minor Injury Rate (per 1000)	Major Injury Rate (per 1000)	Death Rate (per 1000)	Soil Type Selected: S2
4-8	3.66E+00	1.50E+00	6.69E-01	3.66E-01	1.50E-02	6.69E-04	
8-16	3.18E+01	2.06E+01	9.87E+00	3.18E+00	2.06E-01	9.87E-03	Seismic Hazard Data
16-32	1.35E+02	1.14E+02	5.64E+01	1.35E+01	1.14E+00	5.64E-02	Time Period / % of g
32-55	2.71E+02	2.56E+02	1.27E+02	2.71E+01	2.56E+00	1.27E-01	50 year / 75
55-80	3.48E+02	3.40E+02	1.70E+02	3.48E+01	3.40E+00	1.70E-01	250 year / 150
80-100	3.76E+02	3.73E+02	1.86E+02	3.76E+01	3.73E+00	1.86E-01	
>100	3.91E+02	3.89E+02	1.95E+02	3.91E+01	3.89E+00	1.95E-01	

SUMMARY OF BENEFITS AND COSTS WITHOUT CASUALTIES AVOIDED

	Project Benefits without Casualties	$1,416
	Project Costs	$781,257
	Project Benefits Minus Project Costs	($779,841)
	BENEFIT-COST RATIO WITHOUT CASUALTIES AVOIDED	0.00

SUMMARY OF BENEFITS AND COSTS WITH CASUALTIES AVOIDED

	Total Casualties Avoided	$3,104,264
	Project Benefits with Casualties	$3,105,680
	Project Benefits Minus Project Costs	$2,324,423
	BENEFIT-COST RATIO WITH CASUALTIES AVOIDED	3.98

FEMA Disclaimer: The results produced by this analysis are neither conclusive evidence that the proposed project is cost-effective, nor a guarantee that a project is eligible for any government grant for whatever purpose.

Onalaska School District Updated Numbers EFDM.XLS

4/12/2002

Version 5.2.2 December 31, 1998

RIVERINE LIMITED DATA MODULE
Benefit-Cost Analysis of Flood Mitigation Projects

Page 1

PROJECT INFORMATION

Disaster Number	1361-WA	Project	Water Storage Tank Seismic Improvements
DSR Number		Address	
DSR Category		City, State, Zip	
DSR Subject		County	King
Inspection Date		Applicant	Skyway
Application Date	6/27/02	Contact Person	Cherly Scheuerman
Analysis Date	7/3/02	Scenario Run ID	
Analyst	LM,TC	File Save As Name	Bryn Mawr-Lakeridge Reservoir RLDM

PROJECT DATA

Water storage tank seismic improvements
Tank #2-3-4

Project Useful Life (Years)	50
Base Year of Costs	2001
Historic Preservation Issues (Yes or No)?	No
Environmental Issues (Yes or No)?	No

Economic Factors: Discount Rate (%) 7.00 — Present Value Coefficient 13.80

Net Mitigation Project Cost: $608,136

Notes:

Additional Annual Maintenance Cost ($/year) for Mitigation Project	$0
Present Value of Additional Annual Maintenance Cost ($)	$0
TOTAL MITIGATION PROJECT COST	$608,136

TYPE OF FACILITY (for Loss of Function): UTILITY

FACILITY DESCRIPTION:

Loss of Function for Utilities

Unit of Service	water
Unit of Time	Days
Volume of Service Provided	0
Normal Value per Unit of Service ($)	$0.00
Normal Value of Service per Unit of Time ($)	$0
Post-Disaster Continuity Premium per Unit of Time ($)	$0
Total Value of Service Per Time ($)	$0

Total Value of Service *per day* ($): $0

FLOOD HISTORY

Estimated Frequency of Declared Flood Event (Years): 32

Data Sources and Documentation

Assumptions: 1. Based on the Public Assistance Method damage is .5 the total project cost, 2. In a 32-yr event there is not a total collapse of the structure, 3. If there is a redundant system there is not a total loss of services provided, 4. In a 500-yr event there is a total collapse of the struture, total loss of service and damage to the surrounding property.
Loss of services are based on FEMA's determination of the appropriate value of economic impact per capita per day from established tables in Step-By-Step Guide pg. 6.

Bryn Mawr-Lakeridge Water and Sewer RLDM Tank 2-3-4

7/3/2002

Version 5.2.2 December 31, 1998

RIVERINE LIMITED DATA MODULE

Benefit-Cost Analysis of Flood Mitigation Projects

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DAMAGES BEFORE MITIGATION

Flood Frequency Events (Years)	Scenario Flood Damages			Loss of Function Time and Dollars		TOTAL Damages and Losses
	Damages	Loss of Sevice	Other Damge	Days	Losses	
1					$0	$0
2					$0	$0
5					$0	$0
10					$0	$0
32	$304,068	$940,625			$0	$1,244,693
50					$0	$1,244,693
100					$0	$1,244,693
250					$0	$1,244,693
500	$1,245,000	$12,642,525	$5,121,000		$0	$19,008,525
					Total Annualized Damages	$88,147

Data Sources and Documentation

Based on assumption 2, there is no damage to surrounding property or injury to people in a 32-yr event.
Based on assumption 4, there is damge to surrounding property, collapse of tank and casualties.
Loss of service for 32-yr event is based serving 6224 people.
Loss of service for 500-yr event is based serving 6224 people.
Other damages for 500-yr event is based damage equipment, homes, displacement and other negative impacts
Direct Damage to other Structures($4,335,000) Only counted the Water Treatment Building once. Total SNI($651,000). Displ
$14000 a day in loss revenue

DAMAGES AFTER MITIGATION

Flood Frequency Events (Years)	Scenario Flood Damages			Loss of Function Time and Dollars		TOTAL Damages and Losses
	Damages	Loss of Sevice	Other Damge	Days	Losses	
1					$0	$0
2					$0	$0
5					$0	$0
10					$0	$0
32	$30,407	$94,063			$0	$124,469
50					$0	$124,469
100					$0	$124,469
250					$0	$124,469
500	$249,000	$2,528,505	$1,024,200		$0	$3,801,705
					Total Annualized Damages	$14,085

Data Sources and Documentation

For a 32-yr event, damages after mitigation are based on retrofit being 90% effective.
For a 500-yr event, damages after mitigation are based on retrofit being 80% effective.

SUMMARY OF BENEFITS AND COSTS

	Expected Annual	Present Value
Expected Annual Damages Before Mitigation	$88,147	$1,216,488
Expected Annual Damages After Mitigation	$14,085	$194,380
Expected Avoided Damages After Mitigation (BENEFITS)	$74,062	$1,022,108
PROJECT COSTS		$608,136
PROJECT BENEFITS		$1,022,108
BENEFITS MINUS COSTS		$413,972
BENEFIT-COST RATIO		1.68

Data Sources and Documentation

FEMA Disclaimer: The results produced by this analysis are neither conclusive evidence that a proposed project is cost-effective, nor a guarantee that a project is eligible for any government grant for whatever purpose.

Bryn Mawr-Lakeridge Water and Sewer RLDM Tank 2-3-4

7/3/2002

Plan Criteria: *Submitting complete and accurate quarterly progress and financial reports on time.*

The State of Washington has a good record of providing timely, complete and accurate quarterly progress and financial reports on hazard mitigation grant-funded projects. The following summary describes the way the Mitigation Section of the State Emergency Management Division handles this; details are in the Hazard Mitigation Grant Program Administrative Plan, Tab 10.

In each grant agreement with the state, applicants are required to submit quarterly progress and financial reports within 30 days of the end of the quarter, regardless of progress on the funded project or plan during the quarter. Using these reports, along with financial reports generated by the finance office of the State Military Department (home agency of the Emergency Management Division), Mitigation Section staff compile narrative and financial information and submit a comprehensive report to the FEMA Region 10 office within six weeks of the end of the quarter.

An example of how this process works is the Pre-Disaster Mitigation Program, Fiscal Years 2002 and 2003. On pages 21-30 is a copy of text of the October–December 2003 quarterly report submitted by the state to FEMA Region 10 on January 31, 2004.

State of Washington
Pre-Disaster Mitigation Grant Program
Quarterly Report
EMS-2002-GR-4012
October – December 2003

Benton County – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: June 30, 2002 – April 15, 2004

Plan Status: Benton County completed a first draft, which has been reviewed by the state. Comments were provided to the County and an on-site meeting was conducted to discuss changes. County is in the process of Subcommittee continued to meet on a regular basis. In addition, the County planned, scheduled, publicized and held a public meeting to discuss the planning process. Grant period was extended to provide additional time to coordinate and implement feedback.

Benton County Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	100%	Complete
Summary of Comprehensive Plans	100%	Complete
Review of Possible Mitigation Actions	95%	Feb 1, 2004
Completion of "Planning" Public Meetings	100%	Complete
Plan Approval by City Council	0%	Nov 15, 2003
Plan Submitted for State/FEMA Review		Oct 10, 2003

Funding Status:

Federal Award:	$ 89,432.25		Federal Paid:	$ 9,342.41
Local Share:	$ 29,810.75		Local Paid:	$ 82,114.88
Total Project Share:	$ 119,243.00		Total Paid:	$ 91,459.29

City of Centralia – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: June 30, 2002 – July 15, 2004

Plan Status: Performance period has been extended until July 2004 due to challenges of developing a regional plan with Lewis County and the City of Chehalis. Work is progressing satisfactorily at this time.

City of Centralia Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	100%	Completed
Summary of Comprehensive Plans	100%	Completed
Review of Possible Mitigation Actions	100%	Completed
Completion of "Planning" Public Meetings	50%	Feb 15, 2004
Plan Approval by City Council	0%	Jun 22, 2004
Plan Submitted for State and FEMA Review		Mar 31, 2004

Funding Status:

Federal Award:	$ 75,000.00		Federal Paid:	$ 14,974.70
Local Share:	$ 25,000.00		Local Paid:	$ 37,994.46
Total Project Share:	$100,000.00		Total Paid:	$ 52,969.16

City of Kalama – Cowlitz County Regional All Hazards Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: June 30, 2002 – May 31, 2004.

Plan Status: The community has experienced some challenges with the junior taxing authorities participating in the planning process and there has been some slippage in the estimated completion dates of some of the tasks. EMD has requested clarification and assurances that the plan will be completed in accordance with the terms and conditions of the grant agreement.

City of Kalama/Cowlitz County Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	98%	Feb 2004
Summary of Comprehensive Plans	40%	Mar 2004
Review of Possible Mitigation Actions	85%	Mar 2004
Completion of "Planning" Public Meetings	0%	Jun 2004
Plan Approval by City Council	0%	Jun 2004
Plan Submitted for State and FEMA Review		

Funding Status:

Federal Award:	$ 100,000.00		Federal Paid:	$ 73,386.27

Local Share:	$ 33,333.00		Local Paid:	$ 24,462.09
Total Project Share:	$ 133,333.00		Total Paid:	$ 97,848.36

City of Snoqualmie – All Hazards Elements of the Comprehensive Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: June 30, 2002 – November 30, 2003

Plan Status: Plan has been completed and has been submitted to FEMA for review and approval. Once approved, grant close out process will begin.

City of Snoqualmie Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	100%	
Summary of Comprehensive Plans	100%	
Review of Possible Mitigation Actions	100%	
Completion of "Planning" Public Meetings	100%	
Plan Approval by City Council	100%	Oct 27, 2003
Plan Submitted for State and FEMA Review		

Funding Status: The city has requested two reimbursements to date, and will be processing additional payment requests in the near future. Funding expended chart below shows actual federal reimbursements to date, as well as the additional city funds expended for the plan.

Federal Award:	$ 75,000.00		Federal Paid:	$ 19,656.88
Local Share:	$ 25,000.00		Local Paid:	$ 44,085.23
Total Project Share:	$100,000.00		Total Paid:	$ 63,742.11

Ferry County – Ferry County All Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: June 30, 2002 – April 3, 2004

Plan Status: The County continues to experience challenges in junior taxing authorities fulfilling their commitment to participate in the planning process. However, anticipates plan will be completed on time.

Ferry County Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	90%	Nov 20, 2003
Summary of Comprehensive Plans	90%	Dec 1, 2003
Review of Possible Mitigation Actions	50%	Dec 30, 2003
Completion of "Planning" Public Meetings	0%	Jan 2004
Plan Approval by City Council	0%	Feb 2004
Plan Submitted for State and FEMA Review		Mar 2004

Funding Status:

Federal Award:	$ 75,000.00		Federal Paid:	$ 37,563.72
Local Share:	$ 25,000.00		Local Paid:	$ 12,521.25
Total Project Share:	$100,000.00		Total Paid:	$ 50,084.95

Pre-Disaster Mitigation Grant Program
Quarterly Report
EMS-2003-GR-4067
October – December 2003

Chelan County – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: July 1, 2003 – November 30, 2004

Plan Status: County has found that the planning software is more challenging than expected and is experiencing some delays in the gathering of data, but final plan completion appears to be on schedule.

Chelan County Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	80%	Oct 31, 2003
Summary of Comprehensive Plans	0%	Nov 15, 2003
Review of Possible Mitigation Actions	0%	Feb 1, 2004
Completion of "Planning" Public Meetings	0%	Apr 1, 2004
Plan Approval by City Council	0%	
Plan Submitted for State and FEMA Review		Jul 1, 2004

Funding Status: No funds were requested by the county or paid out for this project during this quarter, request for payment will be processed in current quarter.

Federal Award:	$ 37,500.00		Federal Paid:	$ 3,384.59
Local Share:	$ 12,500.00		Local Paid:	$ 6,448.62
Total Project Share:	$ 50,000.00		Total Paid:	$ 9,833.21

City of Gold Bar – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: July 1, 2003 – November 30, 2004

Plan Status: Grant agreement process has been completed and community is coordinating with Snohomish County to gather data. The City has been actively working with Snohomish County to integrate the city's efforts into a County-wide Regional plan. Due to the complexities of the process, some of the initial benchmarks are behind schedule, but plan will be completed by early summer.

City of Gold Bar Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	0%	Oct 2003
Summary of Comprehensive Plans	0%	Dec 2003
Review of Possible Mitigation Actions	0%	Mar 2004
Completion of "Planning" Public Meetings	0%	Apr 2004
Plan Approval by City Council	0%	Jun 2004
Plan Submitted for State and FEMA Review		Jun 2004

Funding Status: No funds have been requested by the city or paid out for this project.

Federal Award:	$ 15,000.00		Federal Paid:	$ 0
Local Share:	$ 5,000.00		Local Paid:	$ 0
Total Project Share:	$ 20,000.00		Total Paid:	$ 0

City of Kenmore – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: July 1, 2003 – November 30, 2004

Plan Status: Plan activities are slightly ahead of schedule at this time.

City of Kenmore Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	100%	completed
Summary of Comprehensive Plans	99%	11/28/03
Review of Possible Mitigation Actions	20%	2/28/04
Completion of "Planning" Public Meetings	90%	12/31/03
Plan Approval by City Council	0%	6/15/04
Plan Submitted for State and FEMA Review		7/1/04

Funding Status: Funds expended to date $16,886.64.

Federal Award:	$ 37,500.00		Federal Paid:	$ 10,594.89
Local Share:	$ 125,900.00		Local Paid:	$ 20,684.69
Total Project Share:	$ 163,400.00		Total Paid:	$ 31,279.58

City of Mercer Island – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: July 1, 2003 – November 30, 2004

Plan Status: Grant agreement process has been completed and the city has selected and hired their consultant who has completed the review of existing city plans.

City of Mercer Island Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	100%	Completed
Hazard Vulnerability/Risk Assessment	60%	Nov 2003
Summary of Comprehensive Plans	100%	Completed
Review of Possible Mitigation Actions	0%	Feb 2004
Completion of "Planning" Public Meetings	0%	Apr 2004
Plan Approval by City Council	0%	Jun 2004
Plan Submitted for State and FEMA Review		

Funding Status: Funds requested will be paid out in the Jan – Mar 04 quarter.

Federal Award:	$ 37,500.00		Federal Paid:	$ 0

Local Share:	$ 12,500.00		Local Paid:	$ 4,893.35
Total Project Share:	$ 50,000.00		Total Paid:	$ 0

City of Sultan – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: July 1, 2003 – November 30, 2004

Plan Status: City has completed the hazard inventory and summary of existing plans.

City of Sultan Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	100%	Completed
Summary of Comprehensive Plans	100%	Completed
Review of Possible Mitigation Actions	30%	April 15, 2004
Completion of "Planning" Public Meetings	0%	June 15, 2004
Plan Approval by City Council	0%	Aug. 15, 2004
Plan Submitted for State and FEMA Review		Oct. 15, 2004

Funding Status: No funds have been requested by the city or paid out for this project.

Federal Award:	$ 37,500.00		Federal Paid:	$ 0
Local Share:	$ 12,500.00		Local Paid:	$ 3,200
Total Project Share:	$ 50,000.00		Total Paid:	$ 3,200

Mason County – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: July 1, 2003 – November 30, 2004

Plan Status: Applicant has begun to complete work associated with the grant agreement. County is currently waiting on several small jurisdictions and tribes to return data for inclusion into the Mitigation 20/20 software.

Mason County Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	100%	Nov 2002
Summary of Comprehensive Plans	100%	Sep 2003
Review of Possible Mitigation Actions	0%	January 2004
Completion of "Planning" Public Meetings	50%	March 2004
Plan Approval by City Council	0%	March 2004
Plan Submitted for State and FEMA Review		June 2004

Funding Status: No funds have been requested by the county or paid out for this project.

Federal Award:	$ 37,500.00		Federal Paid:	$ 0
Local Share:	$ 12,500.00		Local Paid:	$ 11,830.96
Total Project Share:	$50,000.00		Total Paid:	$ 11,830.96

Sumner School District – Comprehensive All-Hazard Mitigation Plan

Plan description: The development of a 322 ALL HAZARD PLAN (per 44 CFR 201.6). This shall include the development and documentation of a planning process, the development and documentation of a risk assessment, the development and documentation of a vulnerability assessment, the development and documentation of a plan maintenance process, and a plan review every five (5) years.

Plan Performance Period: July 1, 2003 – November 30, 2004

Plan Status: Grant agreement executed on July 25, 2003. The District has contracted with Pierce County EM to assist in the development of the plan. District is progressing and has conducted multiple public meetings.

Sumner School District Benchmarks	Percent Completed	Estimated Completion Date
Hazard Inventory	0%	Feb 29, 2004
Summary of Comprehensive Plans	75%	Jan 1, 20045
Review of Possible Mitigation Actions	0%	May 31, 2004
Completion of "Planning" Public Meetings	0%	May 31, 2004
Plan Approval by City Council	0%	Oct 31, 2004
Plan Submitted for State and FEMA Review		Jun 30, 2004

Funding Status: No funds have been requested by the District for this project.

Federal Award:	$ 37,500.00		Federal Paid:	$ 0

Local Share:	$ 12,500.00		Local Paid:	$ 0
Total Project Share:	$50,000.00		Total Paid:	$ 0

State EMD Technical Assistance. The state has continued to provide technical assistance to all PDM planning applicants under this grant, but we have not charged anything against this grant.

Funding Status: No funds have been drawn down by the state to date

Federal Award:	$ 8,375.25		Federal Paid:	$ 0
Local Share:	$ 2,791.75		Local Paid:	$ 0
Total Project Share:	$11,167.00		Total Paid:	$ 0

Plan Criteria: *Completing HMGP and other mitigation grant projects within established performance periods, including financial reconciliation.*

Hazard Mitigation Grant Program – The State of Washington has a history to closing out the Hazard Mitigation Grant Program for most disasters before the Public Assistance Program completes its work. As of February 2004, the state has closed the hazard mitigation program for 15 of 16 disasters since 1989 for which it received grant funding. The grant program for the February 2001 Nisqually earthquake disaster is ongoing. Not counted at this time is the October 2003 flood disaster, for which the state received its preliminary federal funding estimate on February 13, 2004; the project application process is ongoing as of this date.

The state typically receives more qualified grant applications than it can fund after each disaster and uses 100 percent of the allocated Hazard Mitigation Grant Program funds. To date, the state has been awarded $66 million in funds through this program.

Flood Mitigation Assistance – Since the start of the Flood Mitigation Assistance program in 1996, the state has closed out projects within established performance periods. The most recent program year closed out is 2001. Program year 2002 remains open until September 2004, program year 2003 year funds have not yet been awarded, but will be used to fund planned property acquisitions in the Town of Hamilton, and plans for program year 2004 funds have yet been determined.

Through program year 2001, the state has a record of using all the Flood Mitigation Assistance funds awarded. One exception is 1998, when FEMA withdrew funds after sub-grantees were contracts because it has failed to officially notify the state of its award before the end of the performance period.

For program year 2002, it is likely the state will return $161,000 of the $274,000 awarded for projects; the City of Snoqualmie, recipient of funds for property elevations, experienced a change in management in the middle of the project and most likely will be unable to complete it.

To date, the state has been awarded $1.4 million in funds though this program.

Project close out – For all federal hazard mitigation grant programs, the state uses the same process for completing closing out projects:

- Mitigation staff of the State Emergency Management Division use the terms of grant agreements quarterly reports provided by the project grant recipient to monitor progress and ensure the project is on track.

- On-site visits are scheduled for projects requiring additional assistance.

- Final inspections are conducted by an engineer or by mitigation staff, depending upon the type and complexity of the project, to ensure the project is completed to

specifications. For example, a project to elevate homes will be inspected to ensure elevations were conducted to the specifications in the grant agreement, state buildings codes, and National Flood Insurance Program requirements.

- Post-completion inspections are conducted regularly by state mitigation staff to ensure the property owner is complying with the terms of the grant agreement related to maintenance of the mitigation project. For example, such an inspection will make sure that a park developed from a site of property acquisitions remains a park.

- Finally, financial reconciliation is conducted to validate all reimbursement requests before payment is made. Requests are validated against Office of Management and Budget circulars to ensure only allowable costs are reimbursed and that no more than the maximum amount provided for in the grant agreement is reimbursed.

Assessment of Mitigation Actions

Plan Criteria: *Document the system and strategy by which the state will conduct an assessment of the completed mitigation actions and include a record of effectiveness (actual cost avoidance) of each mitigation action.*

The strategy employed by the Mitigation Section of the State Emergency Management Division to assess the effectiveness of mitigation projects and develop a record of their effectiveness is as follows:

At closeout of structural projects, a state engineering inspection affirms costs, and confirms that each project was built to design specifications and that it will provide the benefits projected in the benefit-cost analysis. Immediately following a disaster, the state requests counties impacted by the event to provide information about the effectiveness of mitigation projects in their jurisdiction funded by federal hazard mitigation programs. The Mitigation Section captures this information; it is used in several ways, including the following:

- State and federal mitigation staffs incorporate it into mitigation success stories used by federal and state representatives in disaster recovery to encourage property owners and communities to develop hazard mitigation strategies and projects to improve their disaster resistance.

- Federal, state and local emergency management and mitigation staffs use it to develop materials for public education initiatives related to disaster resistance.

- State mitigation staff use examples to describe the effectiveness of hazard mitigation projects to state legislators and members of Congress. For example, a February 2004 briefing for Congressional staff described three mitigation projects

that prevented damage in the October 2003 flood disaster (DR-1499) – home acquisitions and elevations in Mason and Skagit Counties, acquisition of floodplain by the Lower Elwha-Klallam Tribe in Clallam County.

Recent mitigation project information captured and maintained by the Mitigation Section includes the following (a variety of sources funded the projects, including hazard mitigation grant programs):

- Following the February 1996 flood disaster, a $2.3 million Hazard Mitigation Grant Program project acquired and removed 34 repetitive loss homes including a mobile home park from an area of Skagit River floodplain at Mount Vernon, turning the area into a community park. More than four feet of floodwater covered this area in the October 2003 flood disaster; no damage occurred. According to the benefit-cost analysis, this project prevented more than $1.3 million in damage in what the National Weather Service considered a 35-year flood event.

- A $750,000 HMGP seismic retrofit project for Fire Station #2, which also contains the City of Seattle Emergency Operations Center, protected the facility from significant damage during the February 2001 magnitude 6.8 Nisqually earthquake. Both the fire station and EOC continued operations without missing a beat in the aftermath of the largest earthquake to hit the city and Puget Sound region in 36 years.

- A non-structural retrofit project of a child-care center in Lakewood, Pierce County funded by an Oregon non-profit organization and Project Impact prevented damage and injury to children and staff during the Nisqually earthquake. While the structure experienced some damage, there was no damage inside (i.e., no equipment fell or toppled, which could have injured children or staff).

- A $1.38 million Hazard Mitigation Grant Program-funded seismic retrofit project of the Mercer Island water reservoirs and pump station prevented damage from ground shaking caused by the 2001 Nisqually earthquake. The island is served by two above-ground steel water reservoirs. The reservoirs and pump station were retrofitted and an emergency generator was tied down by restraints; when power was cut to the pump station by a downed power pole, the generator came online for more than six hours to maintain water service to the island.

- Half the manufactured homes in a park along the banks of the Puyallup River in King County were flooded in 1995 by heavy spring rains and snowmelt. Efforts by the National Flood Insurance Program and the Small Business Administration following this event led to the elevating and seismic retrofitting of the homes, none of which was damaged by the 2001 Nisqually earthquake.

- A Seattle Public Schools non-structural mitigation project, funded in part by school district and $400,000 from Seattle's Project Impact, prevented substantial

damage during the 2001 Nisqually earthquake. The damage resulted in limited school closures for minor repairs, far less than that caused by two previous earthquakes. In the April 1949 earthquake, 30 schools closed, 10 condemned, and 2 students killed by falling bricks. In the April 1965 earthquake, eight schools closed, and two severely damaged. Total losses to Seattle schools from the 1949 and 1965 earthquakes was $120 million (1998 dollars).

During the next three years, the Mitigation Section will consider developing a database to capture and better maintain information (including benefit-cost analyses) on the effectiveness of mitigation actions funded by hazard mitigation grant programs. Since the advent of the Hazard Mitigation Grant Program in 1989, more than 150 projects have improved the disaster resistance of about ___ properties, including the elevation or removal of structures from floodways or floodplains. (See action item 2.3.6 in the Mitigation Strategy.)

Effective Use of Available Mitigation Funding

Plan Criteria: *Demonstrate the State effectively uses existing mitigation programs to achieve its mitigation goals.*

The State of Washington effectively uses mitigation programs to achieve its mitigation goals. Among the primary mitigation programs of the state are the federally funded, state-administered hazard mitigation programs (Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program), the state's floodplain management and Flood Control Assistance Account programs and the state's Growth Management Act. Each of these programs has established its own mitigation goals, strategies and/or objectives.

The state-administered hazard mitigation programs require applicants to develop projects that support the hazard mitigation goal, strategies and objectives of the state's hazard mitigation strategy. (Note: The current strategy is the *Washington State Hazard Mitigation Strategy, January 2000*; this document will be superceded upon state adoption and FEMA approval of the 2004 state hazard mitigation plan.) Applicants seeking funds from the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program, are asked to address the following criteria, developed primarily from the goal, strategies and objectives of the 2000 state mitigation strategy:

1. Show adoption of a local hazard mitigation plan.
2. Protect lives and reduce public risk.
3. Reduce the level of disaster vulnerability in existing structures.
4. Reduce the number of vulnerable structures through acquisition, relocation, flood proofing, or seismic retrofitting.
5. Avoid inappropriate future development in areas known to be vulnerable to future disasters.
6. Solve a problem independently, or function as a beneficial part of an overall solution with assurance that the whole project will be completed.
7. Provide a cooperative, inter-jurisdictional solution to reduce future disaster damage.
8. Provide a long-term mitigation solution.
9. Address emergency hazard damage issues such as urban storm water, trees in power right of ways, new earthquake faults, etc.
10. Restore or protect natural resources, recreation, open spaces, and other environmental values.
11. Develop and implement comprehensive programs, standards, and regulations that reduce disaster damage.
12. Increase public awareness of natural hazards, preventative measures, and emergency responses to disasters.
13. Upon completion, have affordable operation and maintenance costs.

14. Illustrate how the project improves the Applicant's ability to protect its critical areas according to the Growth Management Act (GMA), and generally supports the goals of the GMA.

Additionally, the state requires applicants to submit cost-effective mitigation projects; in other words, projects that reduce or prevent at least $1 of damage for every $1 invested in the project. Only projects meeting the 1-to-1 benefit-cost criteria are forwarded to FEMA for funding.

Washington emphasizes effectiveness in the hazard mitigation programs it administers. The state does this, in part, by marketing the programs to all eligible applicants and then working with them to develop the best possible projects; a description of the process of soliciting applications and working with applicants to develop their documents appears elsewhere in this section. For the Hazard Mitigation Grant Program, the state typically receives applications that that at times request up to 10 times the amount of available funding. This allows the state to select and recommend for funding only the best and most-cost-effective projects.

Below are tables which demonstrate the state's effective use of available federally funded hazard mitigation grant programs.

Table 1, on page 36, demonstrates effective use of Hazard Mitigation Grant Program funds. The Total column shows the total amount available through federal, state and local sources for the disasters for which the program was available. The Spent column shows actual dollars spent on that disaster. The Requested column shows, through letters of intent or actual applications, funding sought by potential applicants; figures listed are for disasters in which data was readily available.

Table 2, on page 37, demonstrates effective use of Flood Mitigation Assistance program funds. Typically, due to limited funding available in any one year, project funds are used for a single project, such as a group of acquisitions or elevations proposed by a local jurisdiction, for example. The same is true for planning funds.

Table 3, on page 38, demonstrates effective use of funds made available through the Pre-Disaster Mitigation program. In program years 2002 and 2003, the state made all its planning money available to local jurisdictions developing local hazard mitigation plans.

Table 1. Hazard Mitigation Grant Program Since 1989

Date	Type	Disaster #	Federal Share	State Match	Local Match	Total	Spent*	Requested**
Apr-89	Floods	FEMA-822	$200,840	$100,420	$706,203	$1,007,463	$1,011,852	
Jan-90	Floods	FEMA-852	$1,320,360	$660,180	$660,180	$2,640,720	$2,640,720	$4,238,389
Nov-90	Floods	FEMA-883	$3,221,872	$1,610,936	$1,610,936	$6,443,744	$7,096,387	$7,073,377
Dec-90	Floods/Storms	FEMA-896	$193,000	$96,500	$253,600	$543,100	$543,100	
Oct-91	Fires	FEMA-922	$70,616	$0	$70,616	$141,232	$141,232	
Jan-93	Windstorm	FEMA-981	$843,032	$421,516	$2,066,985	$3,331,533	$3,331,533	$3,197,393
Aug-94	El Nino/Salmon	FEMA-1037	$866,700	$144,450	$144,450	$1,155,600	$1,155,600	
Nov-95	Floods	FEMA-1079	$4,863,497	$868,483	$868,483	$6,600,463	$6,600,463	$50,189,864
Feb-96	Floods	FEMA-1100	$14,900,229	$2,483,372	$2,483,372	$19,866,973	$19,883,305	$46,122,755
Nov-96	Ice Storm	FEMA-1152	$1,200,000	$200,000	$200,000	$1,600,000	$1,706,373	$1,600,000
Dec-96	Winter storms	FEMA-1159	$11,000,109	$1,833,406	$1,833,406	$14,666,812	$15,543,535	$56,764,903
Mar-97	Floods	FEMA-1172	$964,914	$160,819	$160,819	$1,286,552	$1,286,552	$6,902,914
Jun-97	Floods	FEMA-1182	$74,940	$12,400	$12,400	$99,200	$99,200	
Oct-98	Floods	FEMA-1252	$1,106,899	$184,483	$184,483	$1,475,865	$1,475,865	
Oct-98	Landslide	FEMA-1255	$5,051,948	$841,991	$841,991	$6,735,931	$6,735,931	$8,767,565
Mar-01	Earthquake	FEMA-1361	$19,591,125	$3,265,188	$3,265,188	$26,121,500	***	$72,240,000
Oct-03	Flood	FEMA-1499	$683,153	$227,717	$227,717	$1,138,587	***	$14,700,000
		Totals	$66,153,234	$13,111,861	$15,590,829	$94,855,275		$271,797,706

* -- For those disasters whose amount spent exceeds the amount available, the applicant paid the difference

** -- Column shows requested amounts through letters of intent or applications for disasters whose records are readily available.

*** -- Program administration underway for Disasters 1361 and 1499.

Table 2. Flood Mitigation Assistance Since 1996

Year of Award		Federal Award	Match	Available	Committed
1996/97	Project	$105,271	$35,090	$140,361	$140,361
	Plan	$34,310	$11,437	$45,747	$45,747
	TA	$0	$0	$0	$0
	Total	$139,581	$46,527	$186,108	$186,108
1998	Project	$0	$0	$0	$0
	Plan	$0	$0	$0	$0
	TA	$0	$0	$0	$0
	Total	$0	$0	$0	$0
1999	Project	$242,130	$80,710	$322,840	$322,840
	Plan	$18,680	$6,227	$24,907	$24,800
	TA	$0	$0	$0	$0
	Total	$260,810	$86,937	$347,747	$347,640
2000	Project	$171,450	$57,150	$228,600	$228,600
	Plan	$17,500	$5,833	$23,333	$23,333
	TA	$13,376	$4,459	$17,835	$17,833
	Total	$202,326	$67,442	$269,768	$269,766
2001	Project*	$167,670	$55,890	$223,560	$222,056
	Plan	$17,100	$5,700	$22,800	$22,800
	TA**	$18,533	$6,178	$24,711	$21,546
	Total	$203,303	$67,768	$271,071	$266,402
2002	Project	$274,330	$91,443	$365,773	$112,702
	Plan	$16,600	$5,533	$22,133	$22,133
	TA	$15,510	$5,170	$20,680	$20,680
	Total	$306,440	$102,147	$408,587	$155,515
2003	Project***	$115,718	$38,573	$154,291	$154,352
	Plan	$16,100	$5,367	$21,467	$21,467
	TA	$13,440	$4,480	$17,920	$17,920
	Total****	$145,258	$48,419	$193,677	$193,739
2004*****	Project	$155,520	$51,840	$207,360	$0
	Plan	$15,900	$5,300	$21,200	$0
	TA	$17,280	$5,760	$23,040	$0
	Total	$188,700	$62,900	$251,600	$0
Program Totals	**Project**	$1,232,089	$410,696	$1,642,785	$1,180,911
	Plan	$136,190	$45,397	$181,587	$160,280
	TA	$78,139	$26,046	$104,185	$77,979
Total		$1,446,418	$482,139	$1,928,557	$1,419,170

* -- Project cost was less than grant amount; $1,504 returned to FEMA.
** -- Due to Nisqually EQ disaster, state could not spend all TA funds; $3,165 returned to FEMA.
*** -- Snoqualmie could not complete desired number of elevations; $161,628 returned to FEMA.
**** -- Proposed buyout project is pending local acceptance.
***** -- Application process had not begun as of June 1, 2004.

Table 3. Pre-Disaster Mitigation Program

Year	Federal	Match	Total	Requested
2002 - Planning	$464,432	$103,608	$568,040	**
2003 - Planning	$248,375	$62,094	$310,469	**
2003 - PDMc Planning	$237,500	$79,166	$316,666	$1,064,000
2003 - PDMc Project	$371,963	$123,988	$495,950	$34,463,010
Totals	$1,322,270	$368,856	$1,691,125	$35,527,010

** -- Data on total funding requests for planning grants is not readily available.

The state's Growth Management Act requires all cities, towns and counties in the state to identify and protect critical areas, including frequently flooded areas and geologically hazardous areas. Local jurisdictions must use the concept of best available science in preparing critical area regulations; state mitigation staff helped state growth management staff prepare a publication listing sources of best available science. Additionally, cities, towns and counties required to develop comprehensive land-use plans must identify hazard prone areas, and include policies to reduce vulnerability of housing, public facilities, transportation and utilities to identified hazards. Plans can address hazard reduction or hazard avoidance in one of two ways – through the required planning elements or through a separate but optional natural hazard reduction element. A Hazard Mitigation Grant Program project helped fund development of a planning guide for the optional natural hazard reduction element.

The Flood Control Assistance Account Program provides about $2 million in the current 2003-05 state budget to help eligible local agencies that belong to the National Flood Insurance Program prepare comprehensive flood control management plans and flood control maintenance projects that protect human life and property from flood related events. The limited resources in the current biennium are focused on local planning during this biennium – including completion of floodplain management plans begun in previous years and development of the flood planning element of local hazard mitigation plans being prepared under 44 CFR Part 201.6. (Previously, the program made $4 million available per biennium, but the state budget crisis caused it to be cut in half for the current 2003-05 biennium.)

Commitment to a Comprehensive Mitigation Program

The State of Washington is committed to a comprehensive mitigation program and to achieving both state and federal hazard mitigation goals, as shown in the development of several policies to encourage disaster prevention initiatives. A February 10, 2000 report by the Region 10 office of the Federal Emergency Management Agency entitled *State of Washington Mitigation Overview*, provided the following examples:

- The state has dedicated about half of its Hazard Mitigation Grant Program funds to non-structural mitigation; for disasters declared since 1995, that percentage increased to nearly 75 percent.

- The state has worked in partnership with Region 10 staff to ensure timely closeout of disaster mitigation programs.

- The state has required Hazard Mitigation Grant Program applicants to develop a local mitigation plan as a condition of receiving project funds.

- The state is embarking on a comprehensive strategy to target repetitive loss structures for acquisition, including losses recorded in National Flood Insurance Program, Individual and Family Grant program (now called Human Services), and state emergency funds.

The following narrative provides examples of the State of Washington's ongoing commitment to a comprehensive mitigation program.

Plan Criteria: *Demonstrate that the state is committed to a comprehensive mitigation program, which might include any of the following:*

A commitment to support local mitigation planning by providing workshops and training, State planning grants, or coordinated capability development of local officials, including Emergency Management and Floodplain Management certifications.

As described in more detail on pages 1-2 of the Coordination of Local Planning section of this plan, the Mitigation Section of the State Emergency Management Division is committed to support local hazard mitigation planning through an extensive network of assistance. Such assistance includes:

- Meeting with local jurisdictions to review hazard mitigation planning requirements, to provide training, to assist with plan development activities, or to review draft plans. About 200 jurisdictions received such assistance from early 2002 through October 1, 2003.

- Identifying a state hazard mitigation analyst as the primary point of contact and provider of technical assistance for each local planning jurisdiction.

- Providing planning grants through the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Management Assistance Program. Since January 2002, 33 local jurisdictions (counties, cities, school districts, etc.) received more than $2.17 million from these mitigation programs to help them develop local hazard mitigation plans.

- Purchasing and providing at no cost to the local jurisdiction planning software designed to help them prepare hazard mitigation plans. Twenty-three of 39 counties, and cities of Seattle and Tacoma, received planning software. Additionally, two training sessions were provided at no charge to the local jurisdictions.

- Distributing information and data local jurisdictions need to develop risk assessments on local facilities. As of the end of October 2003, about 40 local jurisdictions around the state received copies of hazard profiles, socioeconomic descriptions of nine regions of the state, and assessments of regional vulnerability for the state-identified hazards.

- Helping local jurisdictions connect with appropriate state agencies with information useful for hazard mitigation planning.

- Developing and distributing a "lessons learned and successes" document to local jurisdictions based on the efforts of early local planning efforts.

- Distributing a newsletter every two to three months to provide local jurisdictions with the latest information, guidance and suggestions on hazard mitigation planning.

- Providing information and assistance in map development through Geographic Information System software, and instruction in FEMA's Hazards United States (HAZUS) software program. Since early 2002, 22 counties and 2 cities received GIS software at no charge, and 27 counties received HAZUS software. More than 110 individuals received training on HAZUS in 10 classes and workshops, and another 25 individuals received orientations or overview presentations. Additionally, a users group supports local jurisdictions that use HAZUS.

- Comprehensively reviewing local plans, providing feedback and working with each jurisdiction to ensure their plans meet federal requirements before submission to FEMA for approval. Because of this effort, nine of the 10 local plans submitted to FEMA by February 10, 2004, received FEMA approved on their initial submission.

Plan Criteria: *A statewide program of hazard mitigation through the development of legislative initiatives, mitigation councils, formation of public/private partnerships, and/or other executive actions that promote hazard mitigation.*

The State of Washington places considerable value on partnerships in emergency management, particularly in the areas of hazard mitigation and damage-reduction. In recent years, a number of public-private partnerships established in recent years continue to function.

- The state is a signatory partner in the City of Seattle's ongoing Project Impact, and is an active participant in a public-private working group to develop a disaster-resistance toolkit for businesses, and to pilot communication protocols between the city and its business community.

- The state is a member of the board of directors and an active participant in the Cascadia Region Earthquake Workshop, a coalition of private and public representatives working together to improve the ability of Cascadia Region communities to reduce the effects of earthquake events. Among the goals of the organization is fostering productive linkages between scientists, critical infrastructure providers, businesses and governmental agencies in order to improve the viability of communities after an earthquake event.

- The state is a member of the steering committee of the National Tsunami Hazard Mitigation Program and chairs the local/state tsunami workgroup. State Emergency Management Division staff conducts workshops for leaders of at-risk coastal communities as tsunami inundation models and maps are developed to discuss the hazards and mitigation initiatives.

- The state worked in partnership with the National Tsunami Hazard Mitigation Program, the National Weather Service, Grays Harbor County and City of Ocean Shores to develop a pilot tsunami warning system for at-risk shorelines and beaches. The system is based on NOAA Weather Radio. This system has become an all-hazard system, with installations completed or planned for Port Townsend (homeland security warning), Orting and Puyallup (Mount Rainier lahar warning), Seattle (tsunami and homeland security warning), and Makah and Quileute Indian Nations (tsunami warning). This system has received attention and interest from emergency managers nationwide and internationally.

- The state is working in partnership with the National Weather Service and local communities to establish Tsunami Ready and Storm Ready Communities. The City of Ocean Shores was the first certified Storm Ready community in the nation, and the Quinault Indian Nation was the first tribe in the nation certified Tsunami Ready.

- Partnerships in which the state is involved contribute to the development and dissemination of the latest information on geologic hazards. Examples:
    - The state served on the steering committee that organized a multi-agency, multi-disciplinary workshop in 2002 that explored sources of tsunamis in Puget Sound; this workshop resulted in the publication of the latest scientific knowledge for emergency managers and others.
    - The state organized a multi-disciplinary partnership to present the latest information on the earthquake risk in Puget Sound; more than 100 individuals from the local emergency management community attended four workshops in December 2003. A similar summit on the regional landslide threat is tentatively planned for fall 2004.

  - The state currently serves on the steering committee of a regional project examining the potential impact of a magnitude 6.7 earthquake on the Seattle Fault; the project will provide recommendations to policy makers on mitigation actions and initiatives.

- The state represents the national emergency management community on the national steering committee guiding development of the Advanced National Seismic System. ANSS is a nationwide system of advanced instruments that provide real-time information on earthquakes, information about building and site response, and data on earthquake processes and solid earth structure and dynamics. The state also is a member of the regional ANSS steering committee, and is chair of a national group developing ANSS products for emergency managers.

- The state is an active partner in public-private workgroups that have established or are establishing response and mitigation plans for the Mount Baker, Mount Rainier and Mount St. Helens volcanoes in Washington, and the Mount Hood volcano in Oregon.

- A state partnership with the Olympic National Park Intertribal Cultural Advisory Committee and Hoh Indian Nation developed an earthquake and tsunami education video, told through the eyes of the coastal tribes. The video is used in stand-alone presentations as well as in educating elementary school students (grades K-6) throughout the state. This partnership is developing a tribal earthquake workshop for June 2004, and resulting in initiatives in which the state and tribes are working on preparedness and response issues.

- The state worked in partnership with Pierce County, City of Orting and Orting School District during 2003 to examine the feasibility of and to propose a location for a potential route to evacuate schoolchildren and staff from a valley-flooding volcanic lahar from Mount Rainier.

- The state is partnering with British Columbia officials to develop a tsunami preparedness and mitigation program for that Canadian province.

- The State Seismic Safety Committee, whose members represent public and private organizations from around the state, developed and delivered seismic safety policy recommendations to the Governor's Emergency Management Council in February 2004. The council tasked the committee to establish a business plan for the recommendations.

- Firewise. Funded in part by a National Fire Plan grant and administered by the Department of Natural Resources, this state and federal partnership helps communities learn how to reduce unnecessary losses due to wildland fire in areas of rapid development or historically hard hit by fire. It also provides free assistance to remove hazard trees and create defensible space around homes

and neighborhoods. From 2001 through 2003, this partnership conducted 14 workshops attended by 472 people (emergency planners, county commissioners, insurance agents, builders, fire chiefs and homeowners) from all 181 high-risk wildland fire interface communities of the state.

- Stewardship Incentives Program. Funded and administered by the Department of Natural Resources and the USDA Forest Service in cooperation with other public and private organizations, this program provides funds to private landowners to help thin their forests to make them healthier and less vulnerable to wildfire. A 25-50 percent match, depending on availability of funds, is required from the landowner. Since 2002, the Department of Natural Resources has provided $1.3 million on a cost-share basis to family forest landowners to prepare forest stewardship plans and to thin forests. Additionally, DNR and the Washington State University Extension Program has conducted 21 forest stewardship planning sources (which run eight weeks), and five regional field days in which wildland fire hazard reduction is addressed.

Legislative initiatives:

- Floodplain management. In 1969, the Legislature adopted and the Governor signed into state law a measure prohibiting construction or reconstruction of residential structures in the floodway, except for repairs or improvements that do not increase the ground floor area or that do not exceed 50 percent of the value of the structure. Substantially damaged structures – those whose damage exceeds 50 percent of the structure's value – cannot be rebuilt or repaired. The law was amended in 1999 to exempt existing working farmhouses in designated floodways that meet certain provisions, and to allow for reconstruction or replacement of substantially damaged residential structures under certain circumstances. These provisions go beyond National Flood Insurance Program requirements for designated floodways.

  Additionally, in 1998, the Legislature approved and the Governor signed into law SHB 3110, which addressed environmental mitigation of transportation projects and issues resulting from devastating floods of 1995, 1996 and 1997. One of the requirements of the bill was establishment of an interagency, intergovernmental technical committee; one of its purposes was to examine opportunities for coordination on flood related issues. This committee is convened periodically and currently is addressing FEMA/state flood map modernization efforts.

- Licensing of geologists and geotechnical engineers. In 2000, the Legislature approved and the Governor signed into law ESSB 6455, which established a state board to license geologists and specialty geologists. This bill was developed, in part, because of findings in the *Washington State Hazard Mitigation Strategy, January 2000*, which found that geo-technical reports lacked consistency, tended to be narrow in scope, and prepared by individuals whose qualifications have not been established through state licensing or certification.

At the time the bill was developed, Washington was the only Pacific Rim state that did not license geologists, although it was one of the most geologically active states in the nation. Licensure began July 1, 2001.

- Growth Management Act. In 1990, the Legislature approved and the Governor signed into law the Growth Management Act. It requires all cities, towns, and counties in the state to identify critical areas, which include frequently flooded areas and geologically hazardous areas, and write regulations to limit development in those areas. The act also allows local planning jurisdictions to address natural hazards in their comprehensive land-use plans; a planning guide, developed in part with hazard mitigation funds, has been prepared for this purpose.

Other actions:

The Department of Natural Resources, using Hazard Mitigation Grant Program funds, is developing new soils and liquefaction maps for each of the state's 39 counties. These maps are essential to the implementation of the new suite of building codes that take effect in July 2004, and will help local jurisdictions identify geologically hazardous areas for their critical areas regulations required by the State Growth Management Act.

Plan Criteria: *The State provides a portion of the non-Federal match for HMGP and/or other mitigation projects.*

Washington State's commitment to hazard mitigation extends to its contribution toward the 25 percent non-federal cost share requirement of the Hazard Mitigation Grant Program since established in the late 1980s.

In 16 disasters from 1989 through 2001, the state has contributed nearly 14 percent of the costs of mitigation projects funded by the program. The percentage of contribution to the cost-share can differ, depending upon a number of factors, including the availability of resources and desires of the Governor and Legislature. In the Federal-State agreement for the state's most recent disaster, the October 2003 floods, the Governor said the state would contribute toward the non-federal cost share requirement.

The table below shows the breakdown of costs borne by federal, state and local governments for HMGP projects since 1989.

Hazard Mitigation Program – Cost Shares, through June 2004

Date	Type	Disaster #	Federal	State	Local	Total
Apr-89	Floods	FEMA-822	$ 200,840	$ 100,420	$ 706,203	$ 1,007,463
Jan-90	Floods	FEMA-852	$ 1,320,360	$ 660,180	$ 660,180	$ 2,640,720
Nov-90	Floods	FEMA-883	$ 3,221,872	$ 1,610,936	$ 1,610,936	$ 6,443,744
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Oct-91	Fires	FEMA-922	$ 70,616	$ 0	$ 70,616	$ 141,232
Jan-93	Windstorm	FEMA-981	$ 843,032	$ 421,516	$ 2,066,985	$ 3,331,533
Aug-94	El Nino/Salmon	FEMA-1037	$ 866,700	$ 144,450	$ 144,450	$ 1,155,600
Nov-95	Floods	FEMA-1079	$ 4,863,497	$ 868,483	$ 868,483	$ 6,600,463
Feb-96	Floods	FEMA-1100	$ 14,900,229	$ 2,483,372	$ 2,483,372	$ 19,866,973
Nov-96	Ice Storm	FEMA-1152	$ 1,200,000	$ 200,000	$ 200,000	$ 1,600,000
Dec-96	Winter storms	FEMA-1159	$ 11,000,109	$ 1,833,406	$ 1,833,406	$ 14,666,812
Mar-97	Floods	FEMA-1172	$ 964,914	$ 160,819	$ 160,819	$ 1,286,552
Jun-97	Floods	FEMA-1182	$ 74,940	$ 12,400	$ 12,400	$ 99,200
Oct-98	Floods	FEMA-1252	$ 1,106,899	$ 184,483	$ 184,483	$ 1,475,865
Oct-98	Landslide	FEMA-1255	$ 5,051,948	$ 841,991	$ 841,991	$ 6,735,931
Mar-01	Earthquake	FEMA-1361	$ 19,591,125	$ 3,265,188	$ 3,265,188	$ 26,121,500
Oct-03	Flood (Projected)	FEMA-1499	$ 683,153	$ 227,717	$ 217,717	$ 1,128,587
Total Investment			$ 66,153,234	$ 13,111,861	$ 15,580,829	$ 94,845,924
Percent Cost Share			69.9%	13.7%	16.4%	100.0%

Notes on the state's expenditures for the Hazard Mitigation Grant Program and Flood Mitigation Assistance Program:

- Administration of the Hazard Mitigation Grant Program for the Nisqually Earthquake Disaster (DR-1361) is ongoing.

- For the October 2003 Flood and Severe Storm Disaster (DR-1499) Hazard Mitigation Grant Program, the dollar figures are from the 180-day estimate of federal funding; in the Federal-State agreement, the Governor proposed to share the local match with local applicants.

- For the Pre-Disaster Mitigation and Flood Mitigation Assistance programs, the state has not chosen at this time to provide a portion of the 25 percent of non-federal cost share; applicant agencies are responsible for providing the entire amount through other available sources.

Plan Criteria: *To the extent allowed by State law, the State requires or encourages local governments to use a current version of a nationally applicable model building code or standard that addresses natural hazards as a basis for design and construction of State sponsored mitigation projects.*

The Legislature approved in 2003 the use of a new suite of international building, mechanical and fire codes that address natural hazards as a basis for design and construction in Washington, including the design and construction of state-sponsored mitigation projects. The State Building Code Council adopted these new codes, which take effect statewide in July 2004. Local governments can amend and strengthen these codes to address specific local conditions.

Additionally, the Department of Natural Resources is working on a Hazard Mitigation Grant Program-funded project to develop soils and liquefaction maps for each of the 39 counties in the state that are necessary for the implementation of the new building codes. The maps will help communities determine their seismic risk and local seismic design requirements.

Plan Criteria: *A comprehensive, multi-year plan to mitigate the risks posed to existing buildings identified as necessary for post-disaster response and recovery operations.*

The State of Washington currently does not have a multi-year plan to mitigate the risks posed to existing buildings identified as necessary for post-disaster response and recovery operations. However, a number of projects funded by Hazard Mitigation Grant Program funds following the Nisqually earthquake disaster of February 2001 will mitigate the risks posed to local buildings used for disaster response and recovery operations. This includes facilities used by first responders, school buildings used for evacuation centers, and water facilities needed by communities. Projects funded include seismic retrofits of fire stations in Aberdeen, Port Townsend and South Bend, the city hall in South Bend, school buildings in La Conner, Littlerock, Onalaska, and South Bend, a hospital in Olympia, and water storage facilities in four King County communities. Previously, the state has helped fund generators or wiring for generators for local critical facilities including water systems.

At the state level, the Department of General Administration includes seismic retrofits for all major state-owned facilities, including those on the Capitol Campus in Olympia, when those structures are renovated or rehabilitated. An example of this is the reconstruction of the Legislative Building (the state capitol building), which was damaged in the Nisqually earthquake. Planning for a project to retrofit the building was underway at the time of the earthquake; this expedited effort was combined with earthquake repairs now underway. The department is preparing a budget request for the 2005-07 biennium for in-depth safety analyses for key state including the structures on the Capitol Campus; the findings of these analyses will be used to develop a 10-year capital budget request to strengthen at-risk buildings during the 2007-2016 period.

Additionally, the State Seismic Safety Committee in its December 2003 report to the Governor's Emergency Management Council has recommended an effort to identify and address the seismic vulnerabilities of schools, fire and police stations, and hospitals.

Plan Criteria: *A comprehensive description of how the State integrates mitigation into its post-disaster recovery operations*.

Hazard mitigation is an integral part of Washington's post-disaster recovery operations. Staff from the Mitigation Section of the State Emergency Management Division co-locates with mitigation staff from the Federal Emergency Management Agency at the Disaster Field Office as soon as it opens. Staff from other state agencies that may have particular interest or jurisdiction in the disaster and in recovery operations also co-locate at the DFO. State and FEMA staffs work to identify mitigation opportunities through both the Human Services and Public Assistance programs. Human Services program staff often provides mitigation information to disaster victims. State and federal mitigation staffs work together to identify public education opportunities and use existing materials or develop new materials specific to the hazard and disaster event. Public Assistance program staff encourages potential project applicants to identify mitigation elements in repair and restoration projects. Mitigation and public assistance program staffs often jointly conduct applicant briefings to discuss mitigation opportunities through both public assistance and hazard mitigation grant programs. State mitigation staff quickly disseminates letters of intent and information on the Hazard Mitigation Grant Program to potential applicants, and provide technical assistance to potential applicants on the grant application process.